

CLAIMS

1. An open-type magnet device for MRI,
comprising:

a pair of an upper and a lower magnet
5 assemblies which are arranged to vertically oppose to
each other so as to generate a uniform static magnetic
field in a space region which covers a test portion of
a subject person, and each of which includes: a main
superconductive coil for generating a uniform static
10 magnetic field therebetween and an adjusting
superconductive coil for adjusting magnetic field
uniformity of the uniform static magnetic field;

a cooling vessel containing the main
superconductive coil and the adjusting superconductive
15 coil for maintaining a superconductive state; and

magnetic field adjusting means arranged at
the uniform static magnetic field space side of the
cooling vessel, so as to further adjust the magnetic
field uniformity of the uniform static magnetic field
20 space region.

2. The open-type magnet device for MRI as
claimed in Claim 1, wherein the cooling vessel is a
doughnut-shaped cooling vessel having a through hole in
a center portion thereof and the magnetic field
25 adjusting means is arranged at a predetermined position
of the through hole.

3. The open-type magnet device for MRI as
claimed in Claim 2, the magnetic field adjusting means

is also detachably attached to the side of the uniform static magnetic field space and outside the through hole.

4. The open-type magnet device for MRI as
5 claimed in Claim 1, wherein the cooling vessel is a cylinder-shaped or a doughnut-shaped cooling vessel having a through hole in a center portion thereof and the magnetic field adjusting means is arranged in a region range of $2R/3$ wherein R represents a radius of
10 the opposing surface of the cooling vessel.

5. The open-type magnet device for MRI as
claimed in Claim 1, wherein a gradient magnetic field coil is arranged at the uniform magnetic field space region side of each of the cooling vessels, and the
15 magnetic adjusting means is arranged at the uniform static magnetic field space side of the gradient magnetic field coils.

6. The open-type magnet device for MRI as
claimed in Claim 5, wherein the gradient magnetic field
20 coils include a main coil and a shield coil, and the magnetic field adjusting means is arranged at at least one of following positions: at the uniform static magnetic field space side of the main coil, between the main coil and the shield coil, and between the shield
25 coil and the cooling vessel.

7. An open-type magnet device for MRI,
comprising:

a pair of an upper and a lower magnet

assemblies which are arranged to vertically oppose to each other so as to generate a uniform static magnetic field in a space region which covers a test portion of a subject person, and each of which includes: a main
5 superconductive coil for generating a uniform static magnetic field therebetween and an adjusting superconductive coil for adjusting magnetic field uniformity of the uniform static magnetic field;

a doughnut-shaped cooling vessel having a
10 through hole in a center portion thereof and containing the main superconductive coil and adjusting superconductive coil for maintaining a superconductive state; and

magnetic field adjusting means arranged at a
15 predetermined position in the through hole of the cooling vessel, so as to further adjust magnetic field uniformity of the uniform static magnetic field space region.

8. An open-type magnet device for MRI,
20 comprising:

a pair of an upper and a lower magnetic field generating coils which are arranged so as to vertically oppose to each other and to cover a test portion of a subject person;

25 containers for containing the respective magnetic field generating coils; and

at least one magnetic shim arranged at the uniform static magnetic space region side of the

respective containers, so as to further adjust magnetic field uniformity of the uniform static magnetic field space region.

9. The open-type magnet device for MRI as
5 claimed in Claim 8, wherein the containers are doughnut-shaped containers having a through hole at a center portion thereof and the magnetic shim is arranged at a predetermined position in the through hole.

10 10. The open-type magnet device for MRI as
claimed in Claim 8, wherein a gradient magnetic field coil is arranged at the uniform static magnetic field space region side of each of the containers and the magnetic shim is arranged at the uniform magnetic field
15 space region side of the gradient magnetic field coil.